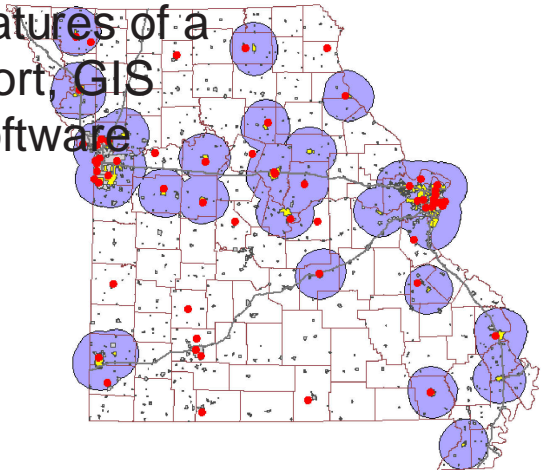# What is GIS?

"GIS" stands for Geographic Information Systems. It has been called
"Intelligent Mapping" because it combines the powerful features of a
database with the location analysis of a digital map. In short, GIS
is a visual decision-making tool that requires hardware, software
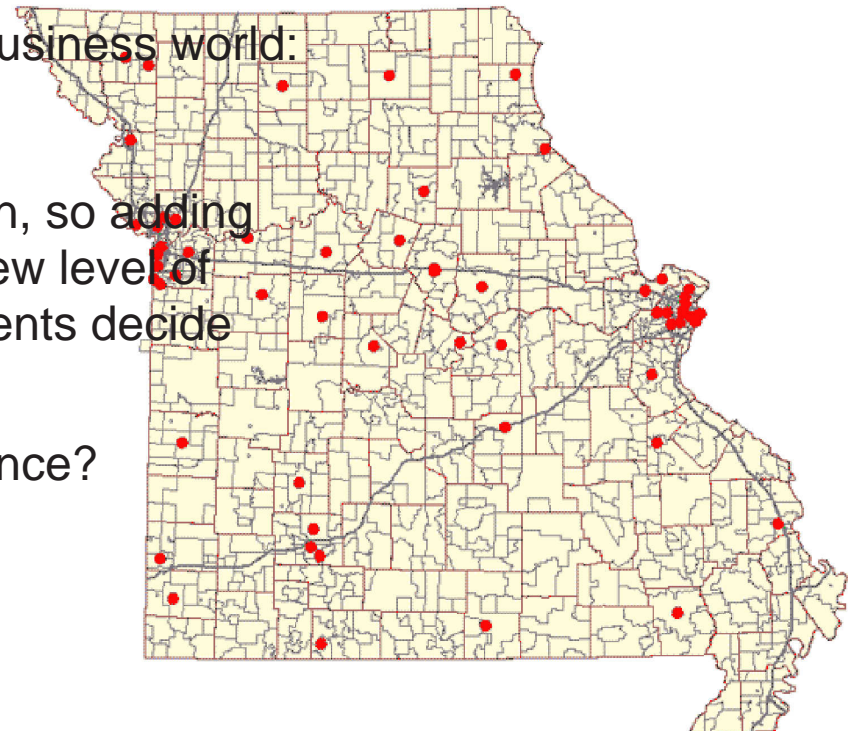and professionals trained in this technology.

Why use GIS in
Economic Development?

GIS illustrates two important realities in the business world:
- "A picture is worth a thousand words" and
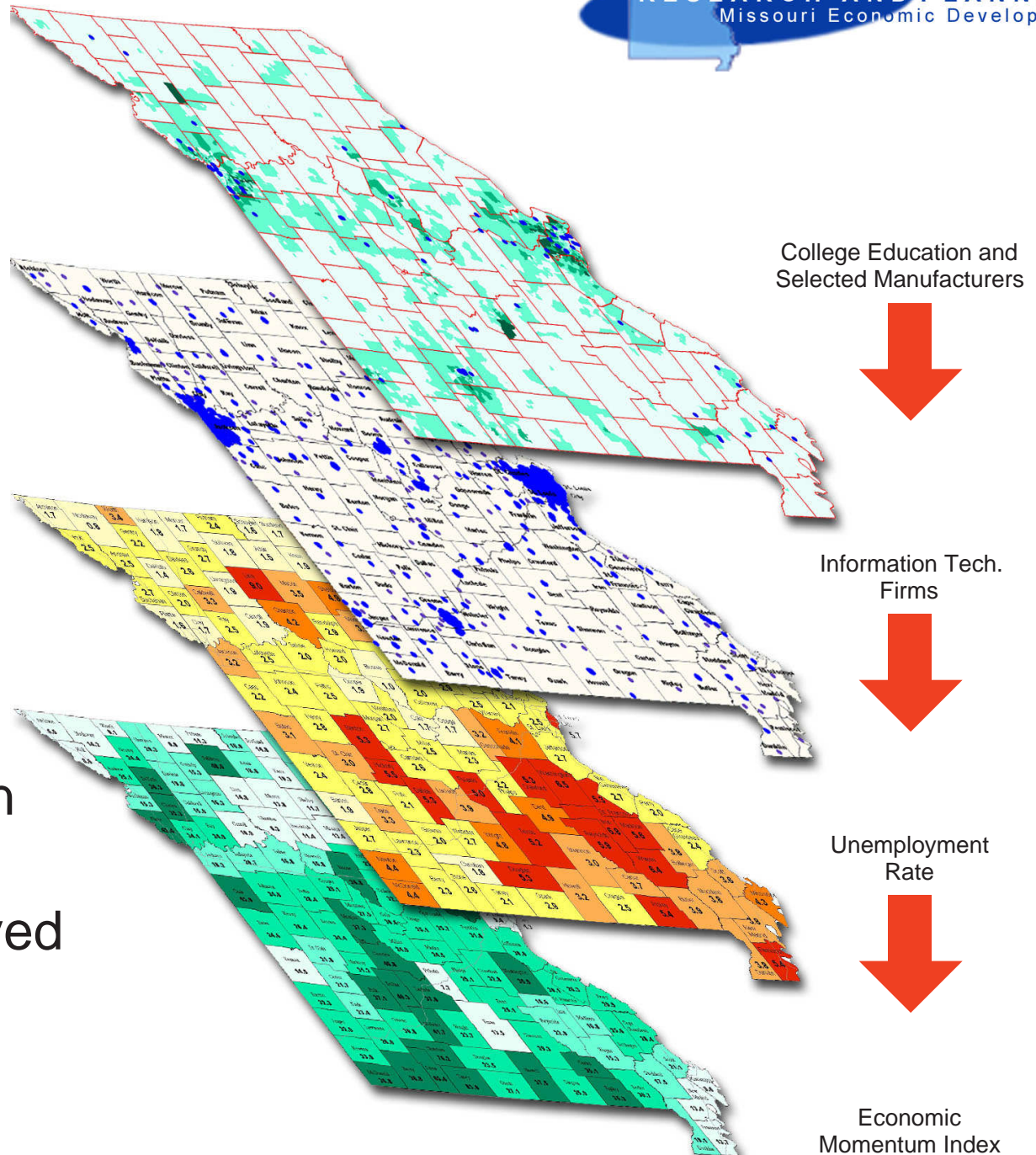- "Location, Location, Location"
Most databases contain locational information, so adding
GIS to the capabilities of an office brings a new level of
analysis that helps businesses and governments decide
the all important question; WHERE?

- WHERE are communities that need assistance?

- WHERE does a qualified labor force exist?

- WHERE to focus tax credits?

- WHERE to locate a factory?

How does GIS work?

GIS takes layers of information that are tied to locations on the earth and overlays them for viewing and analysis. Since these GIS layers have a database, the map can be "asked" questions and the results displayed for review.

College Education and Selected Manufacturers

Information Tech. Firms

Unemployment Rate

Economic Momentum Index

Show Me an Example!

The best way to understand GIS
is to see an example.

**WHERE are
the Colleges
in Missouri?**

GIS Function:
Geocoding

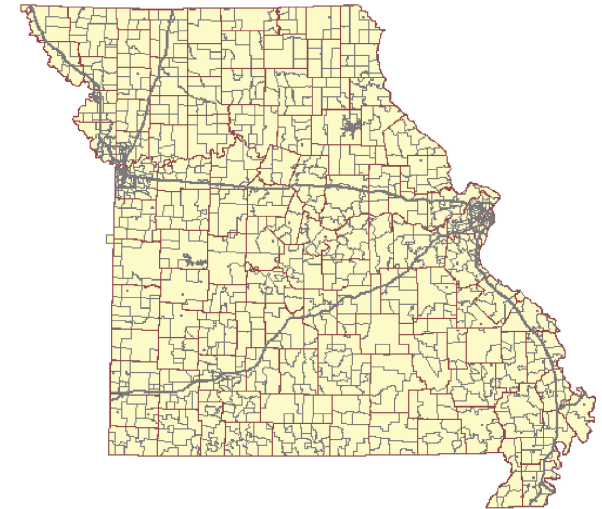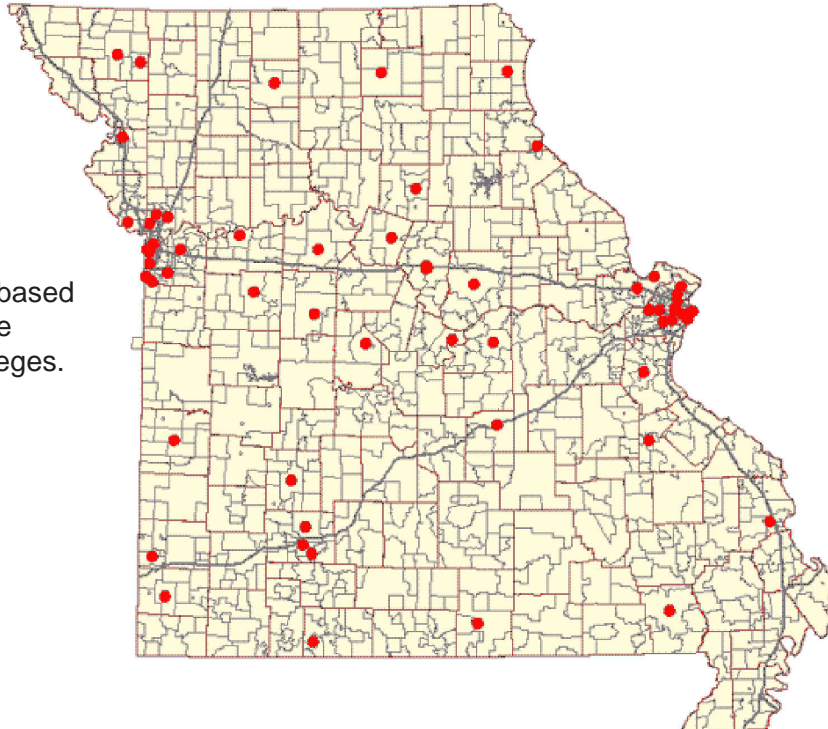| high_ed.dbf			
College_na	City	Zip	Ownership
Central Methodist College	Fayette	65248	Independent
Central Missouri State University	Warrensburg	64093	Public
College of the Ozarks	Point Lookout	65726	Independent
Columbia College	Columbia	65216	Independent
Crowder College	Neosho	64850	Public
Culver-Stockton College	Canton	63435	Independent
East Central College	Union	65084	Public
Fontbonne College	St. Louis	63105	Independent

Bring in a database file of colleges
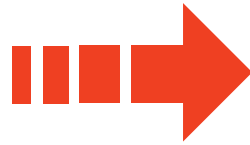(with zip codes) into the GIS

Bring in a GIS layer of zip codes

Geocode addresses based
on zip codes to create
new GIS layer of colleges.

Example Continued...

Now that the data is geocoded, the analysis begins.

WHICH Colleges are within 15 miles of a Smaller City (Population between 10,000 to 80,000)?
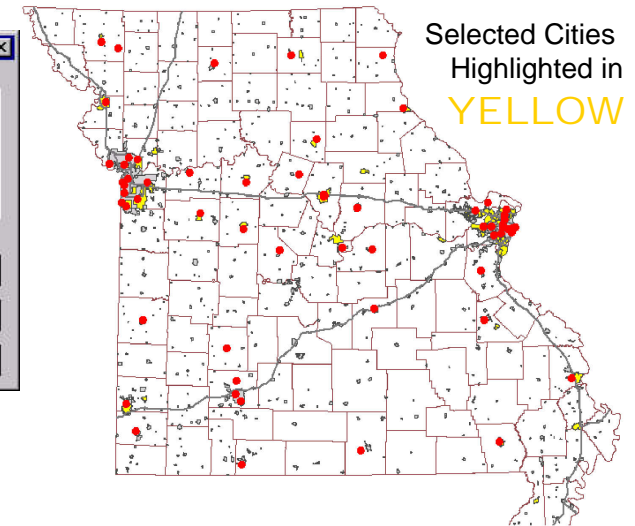
GIS Functions:

Query
Buffer
Select By Theme

Query the database of Cities for populations between 10,000 and 80,000

Selected Cities Highlighted in YELLOW
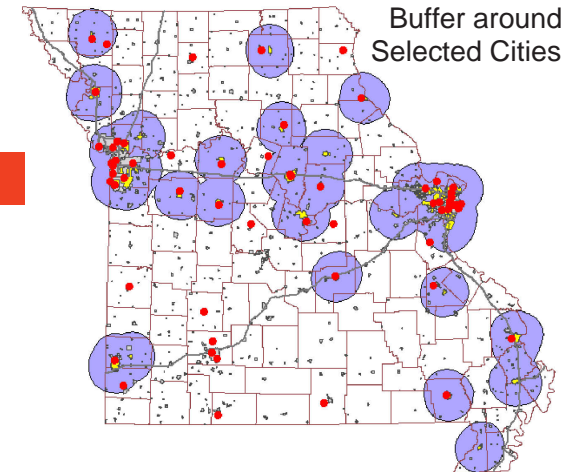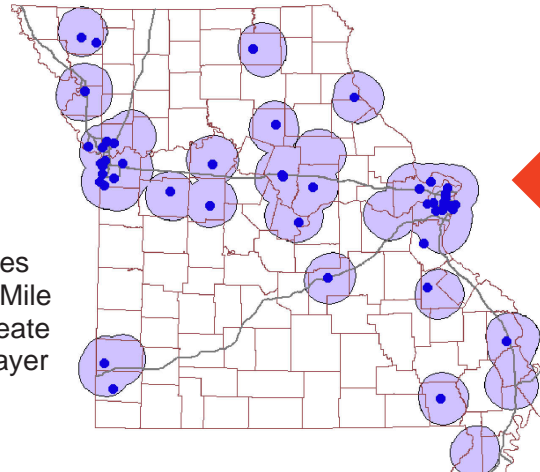
Create a 15 Mile Buffer around Selected Cities

Select Colleges within the 15 Mile Buffer and create a New GIS Layer

RESEARCH AND PLANNING
Missouri Economic Development
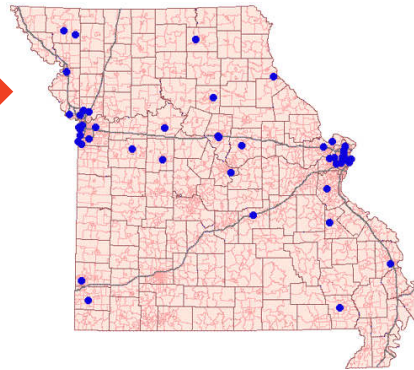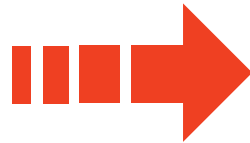
Example Continued...
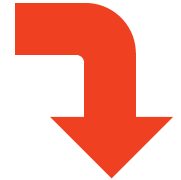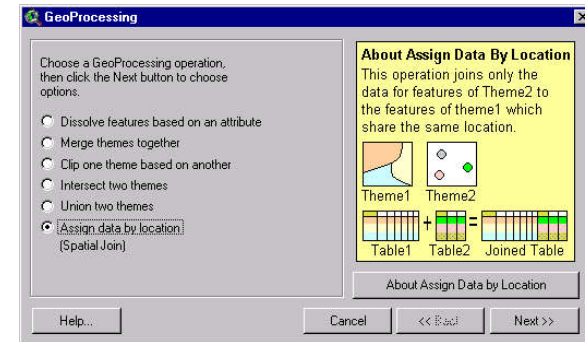
Getting close to an answer.

Use the GIS to add block group information to the GIS layer of colleges. Each college will have information from the block group it is in added to the college database.

WHICH colleges are in an area of young people?

GIS Functions:

Assign Data by Location
Symbolize Data

Census block groups

GeoProcessing

Choose a GeoProcessing operation, then click the Next button to choose options.

- ○ Dissolve features based on an attribute
- ○ Merge themes together
- ○ Clip one theme based on another
- ○ Intersect two themes
- ○ Union two themes
- ● Assign data by location [Spatial Join]

About Assign Data By Location
This operation joins only the data for features of Theme2 to the features of theme1 which share the same location.

Theme1   Theme2

Table1 + Table2 = Joined Table

About Assign Data by Location

Help...   Cancel   << Back   Next >>

Attributes of Colleges near Selected Cities

College_na	City	Zip	Ownership	Median	Pop99
Central Missouri State University	Warrensburg	64093	Public	37.1	1761
Columbia College	Columbia	65216	Independent	22.2	969
Crowder College	Neosho	64850	Public	33.8	1448
Fontbonne College	St. Louis	63105	Independent	37.9	627
Harris-Stowe State College	St. Louis	63103	Public	30.7	500
Jefferson College	Hillsboro	63050	Public	32.6	999
Kansas City Art Institute	Kansas City	64111	Independent	37.2	815
Maryville University of Saint Louis	St. Louis	63141	Independent	42.8	2046
Maple Woods Community College - Met	Kansas City	64156	Public	38.8	330
Longview Community College - Metropo	Lee's Summit	64081	Public	40.2	2930
Blue River Community College - Metropo	Independence	64057	Public	38.9	1576
Penn Valley Community College - Metro	Kansas City	64111	Public	37.2	815
Mineral Area College	Park Hills	63601	Public	42.1	1526
Missouri Western State College	St. Joseph	64507	Public	35.8	1016
Missouri Southern State College	Joplin	64801	Public	38.2	1244

Now Colleges can be Symbolized to see which have the YOUNG! population

Finally, the colleges can be labeled

Colleges near Selected Cities
- ★ 24 and Younger
- ○ 24-34 Gen X
- ● 34 - 45 Gen ?
- ● 45 and Older

Colleges near Selected Cities

Columbia

Columbia College
Stephens College
University of Missouri-Columbia